Even the whole collection of components does not produce the phenomenon except when appropriately organized. But it is precisely by organizing the parts and their operations that a higher level is constituted, thus providing a bridge linking the level of the components to the level of the mechanism.

It is important to emphasize that a mechanistic account, while appealing to parts and their operations, also appeals to the functioning of the mechanism as a whole and how, in virtue of its function, it interacts with entities in its environment. There is, therefore, a critical difference in what is investigated at the lower and higher levels. At the higher level investigators characterize the functioning of the mechanism as it is situated in its environment. Pasteur, for example, characterized yeast cells switching from aerobic to anaerobic metabolism depending on the presence of oxygen in their environment. Biochemical studies, which were not available to Pasteur, could open up the mechanism and reveal the components and their operations that made yeast capable of this switch. The biochemical processes, however, only suffice to explain how the function is performed *in the particular context*. Even after the component parts and operations are identified, it remains the case that the mechanism as a whole in its context performs a function: Switching from aerobic to anaerobic metabolism remains something done by yeast cells (or at least the whole glycolytic system in them). The upper level is far from superfluous – explanation requires both the account of what is happening at the higher level and the account of the components of the mechanism. In this respect, the kind of reduction that arises with mechanistic explanations is also compatible with recognizing the autonomy of higher levels of organization. The operations at a level are unique to the level and must be investigated with the appropriate tools.

The role of organization in generating higher levels is made clear by considering the point of view of an engineer. When an engineer faces a task, what she must do is draw upon the operation of components she already has available and organize them in a new way to accomplish the task. (She may have to iterate this strategy by decomposing what she is trying to accomplish into yet finer-grained operations, some of which can be performed by existing components, but others requiring another level of decomposition so as to design components that can perform those subsidiary tasks.) When she has finished, she has built something new, perhaps something for which she could secure a patent. We would not expect the patent office to deny her a patent because all of the components were already known to her – they were also known to the others who failed to have the insight needed to develop the new mechanism. What she has done is to build a mechanism that performs a new function.